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present an eccentric spherical cavity; this cavity, however, is not the true cell-cavity, but a mere vacuole in the protoplasmic contents. Its size is very various; it is sometimes barely visible under the highest powers, while, in other instances, it occupies nearly the whole of the cell. By the action of iodine the protoplasm is turned dark-brown, and the cell-membrane is then rendered apparent. There is no distinct indication of a nucleus; and authors who have described a manifest nucleus have evidently mistaken for this body the vacuole, already described, in the protoplasm. If a nucleus exist, it is probably concealed in the thick opaque protoplasm. In some instances the contents of the cell appeared broken down into a multitude of detached granules; the cell-wall was then very visible without the aid of iodine; this condition was probably confined to dead cells.

In an example of "spent wash," the residuum which remains after the distillation of the fermented wort, the microscope showed that the solid matter was almost exclusively composed of ferment-cells and *Bacterium* filaments; the cells retained their spherical figure, but their contents presented the granular condition just described. The filaments appeared unaltered.

Dr. Apjohn read a paper on the nature and relative proportion of the alkalies occurring in the granite of the vicinity of Dublin.

A paper was read at a recent meeting of the Academy, by Sir Robert Kane, which communicated the results of some analyses, made under his direction, of waters from Ticknock, on the slope of the Dublin mountains. From this communication it appeared, that these waters included a large amount of alkaline silicates, but that the proportion of potash present was very small compared to that of the soda, their relative quantities being very nearly represented by the numbers 1 and 13.

From these results, and the assumption that the alkalis are derived exclusively from the disintegration of the adjacent granite, Sir Robert Kane went on to infer "that the felspar of our Dublin granite is, on the whole, a soda or albitic felspar, although, in particular spots, orthose or potash felspar may be found." And in the succeeding paragraph of his paper he observes, that he found this conclusion corroborated by the results of numerous analyses of the granitic rocks of the same locality.

Having been present when this paper was read, I certainly felt, relying merely on my memory at the time, that the statement, alleging potash to be absent from the Dublin felspar, or to be but casually present, and only in insignificant quantity, was not in accordance with my experience. I have had this mineral frequently analyzed as an exercise for pupils in my laboratory, and, while recollecting that soda was invariably found in it, I had also very distinctly on my mind that the potash often preponderated, and was never present in very small relative quantity. Upon referring to my notes, and instituting some fresh analyses for the express purpose of throwing light on this question, I find that the impressions I previously entertained are in accordance with my experiments; and as the point under consideration is one of some practical and scientific interest, I am anxious to be permitted to put on record, through the Academy, the evidence in reference to it which I have obtained. The following Table includes two complete analyses of felspar, for some time in my possession, and three partial analyses, made within the last fortnight, for the sole purpose of determining the relative quantities of the potash and soda. The composition of the Mourne felspar has no immediate bearing upon the question under discussion, and is given merely for the purpose of showing that a variety of this mineral, generally considered as a true albite, includes a large relative amount of potash.

	MOURNE MOUNTAINS. (Mr. Cairnes.)	KILLINEY. (Mr. Keightley.)	KINGSTOWN. (Mr. England.)	THREE ROCK. (Mr. Foster.)	THREE ROCK. (Mr. England.)
Silex,	65·17	..	65·03		
Alumina,	19·37	..	18·60		
Lime, . .	0·67	..	0·02		
Magnesia,	0·02				
Potash, . .	5·99	..	12·73	..	9·65
Soda, . .	8·80	..	1·14	..	1·64
Loss,	2·46			4·15	..
				5·72	6·89
	<hr/>		<hr/>		
	100·00		100·00		

According, then, to these experiments, in the felspar of Killiney and Kingstown the potash greatly predominates. In that of the Three Rock Mountain the two alkalies are present in nearly equal quantities; while even in that of the Mourne range, long considered as an albite, the ratio of the quantity of the vegetable to that of the mineral alkalies is that of 2 to 3.

These results are so different from those announced by Sir Robert Kane, that the discrepancy can scarcely be due to errors of experiment, while it is, at the same time, difficult to suggest any other probable explanation of it. It may, indeed, be suggested, that the felspar of the Dublin granite is subject to variation as respects the relative proportions of its alkaline constituents; and it is just possible that, by some singular chance, while the specimens he operated upon contained no alkali but soda, those which were employed in my experiments contained potash also, and in large relative quantity. Upon this explanation, however, I do not feel disposed to lay much stress, when I recollect that Sir Robert Kane's researches on this subject have been, as he informs us, very extensive, and that he considers the conclusion at which he has arrived as "verified by a great number of analyses of specimens of granites from various parts of the great mass which extends from Dublin into the county of Wicklow." His analyses, however, it should be recollected, were analyses, not of felspar, but of

granite, that is, of a mechanical and very variable mixture of quartz, felspar, and mica; and he admits that potash always appeared amongst his results. But its quantity, relatively to the soda, is, he contends, so small, that he is of opinion it should be referred exclusively to the mica, and that the felspar containing no alkali but soda must be viewed as an albite. This argument I cannot but consider as somewhat too circuitous to be altogether satisfactory. The investigation may be conducted in a much more simple manner, and it appears to me that mineralogists will probably not feel themselves safe in adopting the conclusion which Sir Robert Kane has drawn until it is supported by the results of experiments made directly on the felspars themselves.

Sir Robert Kane explained, in reference to Dr. Apjohn's observations, that he had never denied that orthose or potash felspars were found in certain localities of the Dublin and Wicklow range, and that Killiney was certainly one of those, as was sufficiently well known and indicated by the presence of other minerals rich in potash as the Killinite itself, of which portions were actually attached, as Dr. Apjohn admitted, to the specimen of felspar selected by Professor Apjohn for examination. But from Dr. Apjohn's own analyses of the other specimens, it was evident that as they were taken more in the granitic mass, the soda element first equalled the potash, and then preponderated in the granite of the Three Rock Mountain. Hence Dr. Apjohn's analyses did not impugn the truth or accuracy of Sir Robert Kane's idea,—that the predominant character of the granitic district of Dublin and Wicklow was the presence of soda felspars. This idea was founded not merely on the results of the analysis of the waters, read at the last meeting of the Academy, and which in itself Sir Robert Kane did not consider very important, but was the result of a widely-spread series of observations which, on another occasion, Sir Robert Kane hoped to be able to bring before the Academy.